

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Erforschung biologischer Ressourcen der Mongolei
/ Exploration into the Biological Resources of
Mongolia, ISSN 0440-1298

Institut für Biologie der Martin-Luther-Universität
Halle-Wittenberg

2016

Register of Chironomids (Diptera, Chironomidae) of the Lake Khubsugul in Mongolia

E. A. Erbaeva

Irkutsk State University, gsafro@bio.isu.runnet.ru

G. P. Safronov

Irkutsk State University

Follow this and additional works at: <http://digitalcommons.unl.edu/biolmongol>



Part of the [Asian Studies Commons](#), [Biodiversity Commons](#), [Environmental Sciences Commons](#), [Nature and Society Relations Commons](#), and the [Other Animal Sciences Commons](#)

Erbaeva, E. A. and Safronov, G. P., "Register of Chironomids (Diptera, Chironomidae) of the Lake Khubsugul in Mongolia" (2016).
Erforschung biologischer Ressourcen der Mongolei / Exploration into the Biological Resources of Mongolia, ISSN 0440-1298. 173.
<http://digitalcommons.unl.edu/biolmongol/173>

This Article is brought to you for free and open access by the Institut für Biologie der Martin-Luther-Universität Halle-Wittenberg at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in *Erforschung biologischer Ressourcen der Mongolei / Exploration into the Biological Resources of Mongolia*, ISSN 0440-1298 by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Erforsch. biol. Ress. Mongolei (Halle/Saale) 2016 (13): 221-244

Register of Chironomids (Diptera, Chironomidae) of the Lake Khubsugul in Mongolia

E.A. Erbaeva & G.P. Safronov

Abstract

This list presents 107 species and forms of Chironomidae larvae from the lake Khubsugul, which belonging to 5 subfamilies of Chironomidae: Tanypodinae (11 species), Diamesinae (7), Prodiamesinae (1), Orthocladiinae (48), Chironomiinae (40).

Key words: Diptera, Chironomidae, larvae, lake Khubsugul, Mongolia.

1. Introduction

Lake Khubsugul is the largest in Mongolia considering its fresh water reserves and the occupied area. As regards hydrography, this lake makes part of the Arctic Ocean watershed being involved into the system of the Egin-gol, the river Selenga, the lake Baikal, the rivers Angara and Enisey. Lake Khubsugul is a deep oligotrophic high-altitude (1645 m above sea level) lake located in Northern Mongolia, terminating the southern part of the rift zone. The lake is 136 km long with a maximum width of 36.5 km, average width is 20.3 km; the deepest point lies at 262 m depth, the middle one at 133 m, water surface area is 2760 km² and water volume 380 km³ (NATURAL CONDITIONS... 1976).

The original knowledge on the Chironomidae composition was first acquired in 1950s by A. DASHDORZH (1953) who had identified seven species. Later on the study of the Khubsugul Chironomidae was continued by A.A. LINEVICH (1964), who extended the list produced by A. DASHDORZH to 13 species. Through the period since 1970 up to now the comprehensive investigations of the Chironomidae of lake Khubsugul have been carried out under Erbaeva's leadership (ERBAEVA 1976, ERBAEVA et al. 1989, 2011; KOZHOVA et al. 1998, 2000; ERBAEVA & SAFRONOV 2009a, b). The new species *Pseudodiamesa venusta* was described by E.A. MAKARCHENKO (1984) using the material collected by E.A. ERBAEVA. The distribution of chironomids in the lake Khubsugul in context of their density, diversity, habitat heterogeneity and depth of lake was presented by HAYFORD & FERRINGTON (2006).

2. Material and methods

This paper contains the material gathered in the open part of the Khubsugul lake through the time span lasting from 1970 to 1998 in 9 cross sections (fig. 1), more or less evenly spaced (15-20 km) from each other, as well as in the bays and on the lake shore. Samples for quantitative study were taken by the Petersen standard dredge with the capture area size of 0.025 m². At depth 0-1 m of the shoreline, where the rocky grounds predominate, the investigators employed bivalve scrapers. In all cases, samples were washed from silt through the mill sieve № 23.

The distribution of Chironomidae described in the paper followed after CHERNYOVSKIY (1949), PANKRATOVA (1970, 1977, 1983), ASHE & RANSTON (1990), MAKARCHENKO & MAKARCHENKO (1999), PROVIZ & PROVIZ (1999), ANDERSEN et al. (2013).

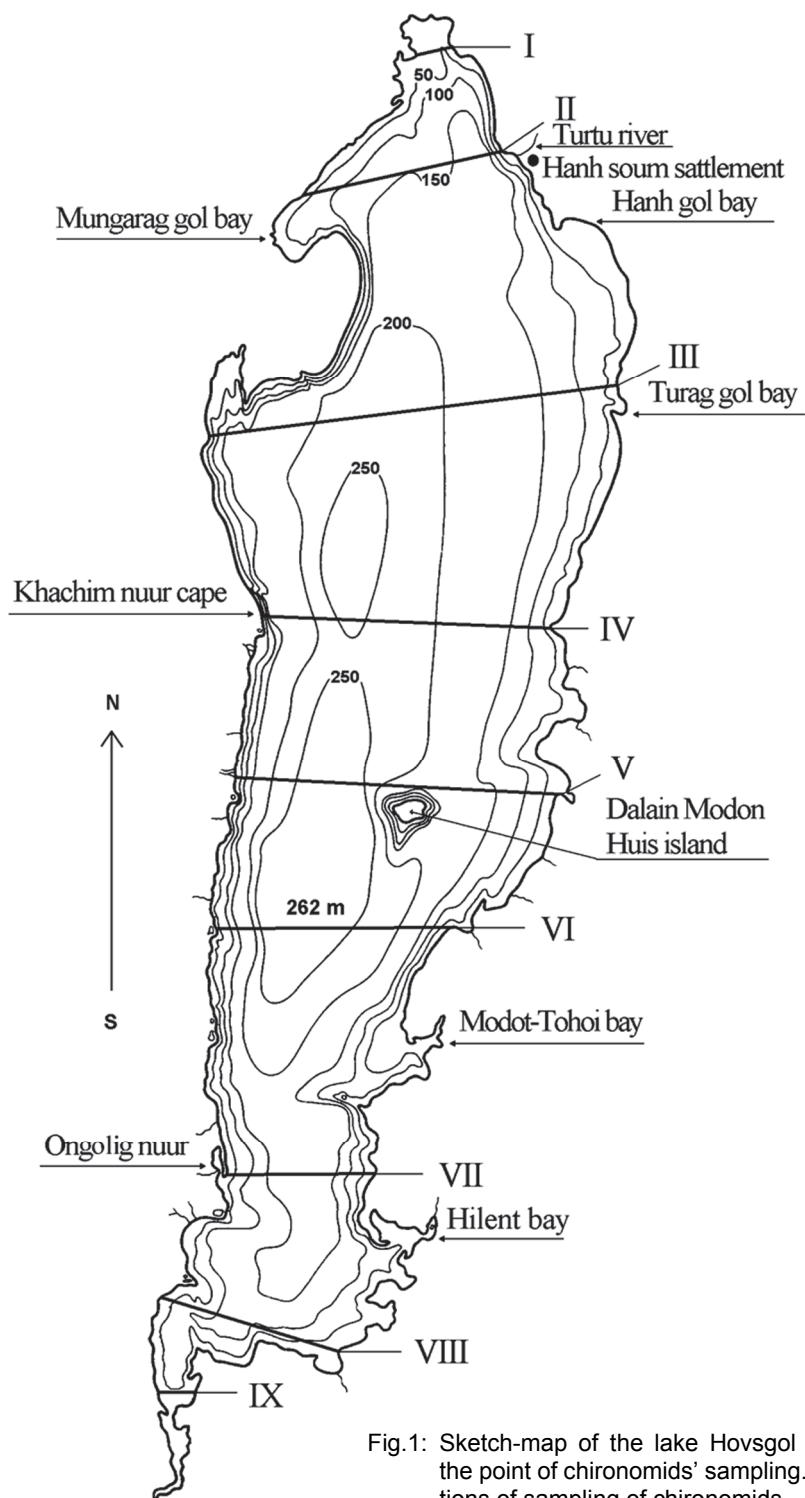


Fig.1: Sketch-map of the lake Hovsgol (Khubsugul) at the point of chironomids' sampling. I-IX: main sections of sampling of chironomids.

3. Taxonomy

CLASS	INSECTA LINNAEUS, 1758
Order	Diptera LINNAEUS, 1758
Family	Chironomidae MACQUART, 1838
Subfamily	Tanypodinae THIENEMANN, ZAVREL, 1916
Tribe	Macropelopiini
Genus	<i>Macropelopia</i> THIENEMANN, 1916

Macropelopia nebulosa (MEIGEN, 1804)

Macropelopia litoralis (MEIGEN, 1804): 22; *Macropelopia bimaculata* (KIEFFER, 1909): 43; *Macropelopia enhydra* (KIEFFER, 1911): 12; *Macropelopia microtoma* (KIEFFER, 1911): 12; *Macropelopia rhyphophila* (KIEFFER, 1911): 12; *Macropelopia ciliatomanus* KIEFFER in THIENEMANN and KIEFFER, 1916: 495; *Macropelopia bitensis* (KIEFFER, 1918): 170; *Macropelopia circumscripta* (KIEFFER, 1918): 170; *Macropelopia flavopilosa* (KIEFFER, 1918): 170; *Macropelopia hirtipes* KIEFFER, 1921: 105; *Macropelopia sigillata* KIEFFER, 1924: 396.

Zoogeographic characterization: Palaearctic species (widespread in Europe; Russia: Karelia, north, centre of the European part, FSU countries: Caucasus; Asia: Japan).

Distribution: It was discovered in the coastal-shallow bay zone within the Ongolig Bay.

Environment, ecology: Stonewort growing over the black silt at depth of 4 m.

Genus *Psectrotanypus* KIEFFER, 1909

Subgenus *Derotanypus* ROBACK, 1971

Psectrotanypus sibiricus KRUGLOVA et CHERNOVSKIJ, 1940

Zoogeographic characterization: European-Siberian species (Europe: Germany, Bulgaria; Russia: European part centre, Western and Eastern Siberia).

Distribution: It was found in the northern termination and Modot Bay of the Khubsugul lake.

Environment, ecology: Bush of stonewort and water horsetail over black silt with sand; depth 1.5-10 m.

Tribe Procladiini

Genus *Procladius* SKUSE, 1889

Subgenus *Holotanypus* ROBACK, 1982

Procladius choreus (MEIGEN, 1804)

Procladius incomptus (WALKER, 1856): 180; *Procladius albiforceps* (KIEFFER, 1918): 109.

Zoogeographic characterization: Palaearctic species (widespread in Europe; Russia: European part centre; Asia: China, Japan, Korea; Northern Africa: Tunis).

Distribution: It was found in the coastal-sor zone, within the Ongolig Bay and open part in cross-sections II and V of the Khubsugul lake.

Environment, ecology: Silty sand; silty carbonate sand; silty sand with *Cladophora*; depth 2-39 m.

Procladius ferrugineus (KIEFFER, 1918)

Zoogeographic characterization: European-Siberian species (widespread in Europe; Russia: center of European part, Western Siberia).

Distribution: It was found in all cross-sections from I to IX in the open part, within the bays Turug, Alag-sar and Ongolig of Khubsugul lake.

Environment, ecology: Silty sand; carbonate silt with sand; carbonate crusts; stonewort brushwood, pondweed and moss; depth 2.2-40 m.

***Procladius* sp.**

Distribution: In the lake Khubsugul this species was found in open parts of I, VI, VIII, IX sections.

Environment, ecology: Sand, detritus, pebbles; silty sand; depth 0.4–19 m.

Subgenus *Psilotanypus* KIEFFER, 1906

***Procladius imicola* KIEFFER, 1922**

Procladius nigriventris KIEFFER, 1922: 363.

Zoogeographic characterization: European-Siberian species. (Europe: Germany, Poland, Sweden; Russia: European part centre, Mongolia).

Distribution: In lake Khubsugul it dwells in the Modot and Khilent bays, in the northern termination, and in the open part of section II.

Environment, ecology: Sand; silty sand; carbonate sand; pondweed, moss and stonewort growing on silt; depth 1.2–22 m.

***Procladius ruffovittatus* (VAN DER WULP, 1874)**

Zoogeographic characterization: Palaearctic species (Europe: Germany, Great Britain, Hungary, Ireland, the Netherlands, Poland, Finland; Russia: European part centre).

Distribution: In lake Khubsugul it occurs in the Khilent bay.

Environment, ecology: Rocks; depth 1–2 m.

Tribe Pentaneurini

Genus *Ablabesmyia* JOHANNSEN, 1905

***Ablabesmyia monilis* (LINNAEUS, 1758)**

Ablabesmyia maculata (DE GEER, 1776): 345; *Ablabesmyia semiglabra* (KIEFFER, 1915): 66;

Ablabesmyia miriforceps (KIEFFER in THIENEMANN and KIEFFER, 1916): 520.

Zoogeographic characterization. Holarctic species, also occurring in the Oriental region (it is widespread in Europe; Russia: center and south of European part, FSU countries: Middle Asia; Asia: Japan, Korea, Canary Islands; Oriental region: Taiwan; Nearctic region: Canada, the USA).

Distribution: In lake Khubsugul it dwells in the Modot bay, in the northern termination, within the Ongolig bay and in the open part in section II.

Environment, ecology: Rocks, sand; silty sand; silty carbonate sand; silty sand with stonewort and *Cladophora*. Depth 0.2–55 m.

***Ablabesmyia phatta* (EGGER, 1863)**

Ablabesmyia connectens THIENEMANN, 1937: 165.

Zoogeographic characterization: European-Siberian species (widespread in Europe; Russia: centre and south of the European part; Mongolia).

Distribution: In lake Khubsugul it dwells within the Ongolig bay, northern termination, the open part in section II.

Environment, ecology: Sand; silty sand; carbonate sand with silt; sand with detritus and pondweed; depth 1–6 m.

Genus *Larsia* FITTKAU, 1962

***Larsia curticalcar* (KIEFFER, 1918)**

Zoogeographic characterization: Palaearctic species (Czech Republic, Germany, Great Britain, Ireland, Turkey, Yugoslavia; Russia: European part centre).

Distribution: In lake Khubsugul it dwells in the Ongolig bay, within the open part in section II.

Environment, ecology: Rocks overgrown with *Ulotrix*; carbonate concretions; carbonate sand; silty sand; depth 0.05–10 m.

Genus *Thienemannimyia* FITTKAU, 1957

***Thienemannimyia lentiginosa* (FRIES, 1823)**

Thienemannimyia laccobia (KIEFFER in THIENEMANN and KIEFFER, 1916): 538; *Thienemannimyia quadriscripta* (VIMMER, 1927): 69.

Zoogeographic characterization: European-Siberian species (widespread in Europe: Czech Republic, Great Britain, Hungary, Ireland, Sweden, Finland, Turkey, Yugoslavia; Asia: Mongolia).

Distribution: In lake Khubsugul it dwells in the Khankh, Modot, Khilent, Alag-sar bays, within Ongolig bay and in the open part in II, III, V, VI, VII, VIII and IX sections.

Environment, ecology: Rocks, sand; silty sand; carbonate silt with sand; carbonate concretions; sand with *Cladophora*; depth 1.2-45 m.

Subfamily Diamesinae KIEFFER, 1923

Tribe Protanypini

Genus *Protanypus* KIEFFER, 1906

***Protanypus morio* (ZETTERSTEDT, 1838)**

Protanypus miriforceps (KIEFFER, 1923): 10; *Protanypus gracilior* (KIEFFER, 1924): 82; *Protanypus stiligera* (KIEFFER, 1924): 81.

Zoogeographic characterization: Palaearctic species (Europe: Germany, Great Britain, Ireland, Norway, Sweden, Finland, Austria, Poland; Asia: Japan; Russia: European part north, Western and Eastern Siberia, Russian Far East).

Distribution: In lake Khubsugul it inhabits the Modot, Khilent, Mongorin-gol, Turug-gol, Alar-sar bays, northern termination and open part in II, III, IV, V, VII, VIII, IX sections.

Environment, ecology: Sand; silty sand; carbonate sand; carbonate silt with *Cladophora*; sand with stonewort; silty sand with *Cladophora*; black silt, moss, stonewort; carbonate concretions; depth from 1.5 to 42 m.

Tribe Diamesini

Genus *Diamesa* MEIGEN, 1835

***Diamesa inaequalis* PANKRATOVA, 1950**

Zoogeographic characterization: Siberian species (FSU countries: Tadzhikistan).

Distribution: In lake Khubsugul it is found in the northern termination and in the open part in section II.

Environment, ecology: Silty sand; carbonate sand; silty sand with carbonates and *Cladophora*; silty sand, moss and stonewort; stonewort bush grown over black silt; depth from 1.7 to 29 m.

***Diamesa insignipes* KIEFFER in KIEFFER and THIENEMANN, 1908**

Diamesa prolongata KIEFFER, 1909: 40.

Zoogeographic characterization: Holarctic species (Europe: Great Britain, Bulgaria, Switzerland, Czech Republic, Germany, Denmark, France, Austria, Greece, Hungary, Italy, Ireland, Poland, Romania, Yugoslavia; Russia: Western and Eastern Siberia, Russian Far East, FSU countries: Caucasus; Northern Africa: Morocco; Nearctica: the USA).

Distribution: In lake Khubsugul it is found in the northern termination and within the Ongolig bay.

Environment, ecology: Pebbles overgrown with *Ulotrix*; brushwood of stonewort and pondweed over silt; depth 0.2-2.5 m.

Genus *Pseudodiamesa* GOETGHEBUER, 1939

***Pseudodiamesa branickii* (NOWICKI, 1873)**

Pseudodiamesa pilosa (KIEFFER, 1924): 48; *Pseudodiamesa belingi* FITTKAU, 1954: 84.

Zoogeographic characterization: Holarctic species, it also occurs in the Oriental region (widespread in Europe: Sweden, Norway, Scotland, Germany, Czech Republic; Russia: European part center, Russian Far East; Northern Africa: Morocco; Oriental region: Nepal; Nearctica: Greenland, Canada; Asia: China (Tibet)).

Distribution: In lake Khubsugul it is found in the bays Khilent, Alag-sar, in the open part in IV, V, VI, VII and VIII sections.

Environment, Ecology. Boulders and pebbles overgrown with algae; silty sand; sand; carbonate concretions; depth 1-45 m.

***Pseudodiamesa nivosa* (GOETGHEBUER, 1928)**

Pseudodiamesa albipennis (KIEFFER, 1918):104; *Pseudodiamesa pubitarsis* (ZETTERSTEDT, 1838):821; *Pseudodiamesa stakelbergi* (GOETGHEBUER, 1933): 22.

Zoogeographic characterization: Palaearctic species (it is widespread in Europe; Russia: European part north (New Land), Russian Far East; Asia: Lebanon, Afghanistan).

Distribution: In lake Khubsugul it was found in the bays Khilent, Mongorin-gol, Turug-gol, Alag-sar, in the northern termination, within Ongolig bay and in the open part in II, III, IV, V, VI, VII, VIII and IX sections.

Environment, ecology: Boulders, pebbles overgrown with *Ulotrix*; sand; sand, detritus, moss; carbonate concretions; silty sand; silty sand, stonewort; silty sand with detritus; silty sand with *Cladophora*; carbonate sand; black silt with sand and algae; depth 0.3-92 m.

***Pseudodiamesa venusta* MAKARCHENKO, 1984**

Zoogeographic characterization: Endemic species of lake Khubsugul.

Distribution: Three males were caught on the eastern shore near Khankh village; one male was caught in the mouth of the Khoru River.

Environment, ecology: Rocks, stony bottom deposits, sand; depth 0-60 m.

Genus *Potthastia* KIEFFER, 1922

***Potthastia longimana* (KIEFFER, 1922)**

Potthastia campestris (EDWARDS, 1929): 307.

Zoogeographic characterization: Holarctic species (in Europe it occurs widely; Russia: European part center, Western and Eastern Siberia; Asia: Japan; Nearctic: Canada).

Distribution: In lake Khubsugul it was found in the Alag-sar bay, northern termination and within the Ongolig bay.

Environment, ecology: Pebbles with algae; carbonate silty sand; carbonate concretions; carbonate sand with *Cladophora*; stonewort brushwood growing over black silt; depth 0.3-10 m.

Subfamily Prodiamesinae SAETHER, 1976

Genus *Monodiamesa* KIEFFER, 1922

***Monodiamesa bathyphila* (KIEFFER, 1918)**

Zoogeographic characterization: Holarctic species (it broadly occurs in Holarctic; Russia: European and Asian parts).

Distribution: In lake Khubsugul it was found in the Modot, Khilent, Mongorin-gol, Alag-sar bays and within the Ongolig bay, in the open part in II, III, IV, V, VI, VII, VIII and IX sections;

Environment, ecology: Sand; silty sand; carbonate sand; silty sand with stonewort and *Cladophora*; black silt, moss and *Chara*; carbonate concretions, stonewort bush; silt with *Cladophora*; depth 1.7-50 m.

Subfamily Orthoclaadiinae EDWARDS, 1929

Genus *Acricotopus* KIEFFER, 1921

***Acricotopus lucens* (ZETTERSTEDT, 1850)**

Acricotopus coaequatus (WALKER, 1856): 190; *Acricotopus moturus* (WALKER, 1856): 188; *Acricotopus nitidicollis* (WALKER, 1856): 187; *Acricotopus obsepiens* (WALKER, 1856): 183; *Acricotopus patibilis* (WALKER, 1856): 174; *Acricotopus pervulsus* (WALKER, 1856): 179; *Acricotopus dilatus* (VAN DER WULP, 1858): 167; *Acricotopus sagittalis* (KIEFFER in KIEFFER and THIENEMANN, 1908): 7; *Acricotopus longimanus* (KIEFFER in KIEFFER and THIENEMANN,

1908): 9; *Acricotopus halobius* (KIEFFER, 1915): 477; *Acricotopus grandis* KIEFFER, 1921: 90; *Acricotopus funebris* (GOETGHEBUER, 1921): 99; *Acricotopus lobatus* (KIEFFER, 1921): 293; *Acricotopus sessilis* KIEFFER, 1921: 91; *Acricotopus atrinervis* KIEFFER, 1921: 91; *Acricotopus brevipalpis* (KIEFFER, 1923): 157.

Zoogeographic characterization: Holarctic species (in Europe it occurs widely; Russia: north, center, European part south, Eastern Siberia; FSU country: Kazakhstan; Nearctica: Canada).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Carbonate concretions; stonewort bush over black silt; depth 19 m.

Genus *Brillia* KIEFFER, 1913

***Brillia modesta* (MEIGEN, 1830)**

Brillia bifidus (KIEFFER, 1909): 48; *Brillia petrensis* KIEFFER, 1913: 34; *Brillia brevinervis* KIEFFER in THIENEMANN and KIEFFER 1916: 516; *Brillia sylvestris* GOETGHEBUER, 1921: 82; *Brillia arcuata* KIEFFER, 1923: 160; *Brillia dendrophila* ZVEREVA, 1950: 279; *Brillia immaculata* BOTNARIUC ET CURE, 1956: 263; *Brillia pallida* CHERNOVSKIJ, 1949: 111; *Brillia seitenstetensis* (STROBL, 1880): 54.

Zoogeographic characterization: Holarctic species (in Europe and Russia it occurs widely; Asia: Japan; Nearctica: the USA).

Distribution: In lake Khubsugul it was discovered in the Alag-sar and Khankh bays, in the northern termination and in the open part in sections II, V, VI, VII, VIII and IX.

Environment, ecology: Rocks overgrown with algae; sand; pebbles, sand, silt; sand with *Cladophora* and stonewort; silty sand; carbonate sand; carbonate concretions; silt, detritus, moss; black silt overgrown with stonewort brushwood; depth 0.3-50 m.

Genus *Corynoneura* WINNERTZ, 1846

***Corynoneura celeripes* WINNERTZ, 1852**

Corynoneura atra WINNERTZ, 1852: 50; *Corynoneura bifurcata* KIEFFER, 1921: 808; *Corynoneura antenalis* KIEFFER, 1921: 807.

Zoogeographic characterization: Holarctic species (in Europe: Austria, Czech Republic, Germany, France, Great Britain, Hungary, Ireland, Netherlands, Finland, Yugoslavia; Russia: center and south of European part, Western Siberia; Nearctic: the USA).

Distribution: In lake Khubsugul it was discovered in the Khankh bay, within the Ongolig bay and in the open part in sections II, V, VII and IX.

Environment, ecology: Pebbles; rocks overgrown with *Ulotrix*; silty sand; silty sand with carbonates and *Cladophora*; silt, detritus, moss; stonewort bush growing over black silt; depth 0.2-21 m.

***Corynoneura scutellata* WINNERTZ, 1846**

Corynoneura innupta EDWARDS, 1919: 226.

Zoogeographic characterization: Holarctic and Neotropical species (Europe: Austria, Spain, France, Great Britain, Greece, Ireland, Norway; Russia: center and south of European part, Western and Eastern Siberia; Asia: Lebanon; Nearctic: Greenland, Canada, the USA; Neotropical region: Chile).

Distribution: In lake Khubsugul it is available in the Mongorin-gol and Alag-sar bays, in the northern termination and in the open part in sections V, VI and VIII.

Environment, ecology: Pebbles; pebble overgrown with *Ulotrix*; sand, highest aquatic vegetation; silty sand; silt, stonewort (*Chara*), sand, carbonate concretions; carbonate sand; depth from 0.2 to 19 m.

***Cricotopus* VAN DER WULP, 1874**

Subgenus *Cricotopus* VAN DER WULP, 1874

***Cricotopus algarum* (KIEFFER, 1911)**

Cricotopus lambertoni (KIEFFER, 1923): 160.

Zoogeographic characterization: European-Siberian species (Europe: Austria, Germany, France, Yugoslavia; Russia: European part south; Asia: Mongolia).

Distribution: In lake Khubsugul it was discovered in the northern termination, within the Ongolig bay, in the open part in sections V and VI.

Environment, ecology: Sand; silty sand; carbonate crusts; carbonate silt. Depth from 1.7 to 30 m.

***Cricotopus bicinctus* (MEIGEN, 1818)**

Cricotopus bryophilus (KIEFFER, 1921): 800; *Cricotopus dizonias* (? , 1830): 252; *Cricotopus gibbosus* (MEIGEN, 1830): 252; *Cricotopus balticus* (KIEFFER, 1926): 102.

Zoogeographic characterization: Holarctic species, it is widespread in the Holarctic region (Lebanon, Japan and Korea included).

Distribution: In lake Khubsugul it was discovered in the Alag-sar bay, in the open part in II, III, VI, VII and VIII sections.

Environment, ecology: Pebbles overgrown with algae; depth 0.3-1 m.

***Cricotopus fuscus* (KIEFFER, 1909)**

Cricotopus prasiogaster (KIEFFER, 1911): 186; *Cricotopus glauciventris* (KIEFFER, 1911): 186; *Cricotopus glyceriae* (KIEFFER, 1913): 30; *Cricotopus longistilus* (KIEFFER, 1915): 83; *Cricotopus ocularis* (KIEFFER 1924): 84; *Cricotopus pergrandis* (KIEFFER, 1924): 84; *Cricotopus tendipedellus* KIEFFER, 1924): 85; *Cricotopus fallaciforceps* (KIEFFER, 1924): 89; *Cricotopus eminens* (KIEFFER, 1924): 90; *Cricotopus brevicrus* (KIEFFER, 1924): 90; *Cricotopus biformis* EDWARDS, 1929: 325.

Zoogeographic characterization: European-Siberian species (Europe: widely distributed; Russia: European part centre, Western and Eastern Siberia).

Distribution. In lake Khubsugul it is distributed in the northern termination and in the open part in section II.

Environment, ecology: Pebbles overgrown with *Ulotrix*; carbonate silty sand; depth varying from 0.2 to 20.5 m.

Subgenus *Isocladius* KIEFFER, 1909

***Cricotopus sylvestris* (FABRICIUS, 1794)**

Cricotopus albipes (KIEFFER, 1909): 44; *Cricotopus longipalpis* KIEFFER, 1909: 45; *Cricotopus petiolatus* KIEFFER, 1909: 45; *Cricotopus crassus* (KIEFFER, 1915): 295; *Cricotopus saxicola* KIEFFER in THIENEMANN and KIEFFER, 1916: 512; *Cricotopus superans* KIEFFER in THIENEMANN and KIEFFER, 1916: 538; *Cricotopus suecicola* KIEFFER in THIENEMANN and KIEFFER, 1916: 537; *Cricotopus attenuatus* KIEFFER, 1921: 800; *Cricotopus pallidus* KIEFFER, 1921: 802; *Cricotopus praecox* GOETGHEBUER, 1942: 11; *Cricotopus thermicola* TUXEN, 1944: 89; *Cricotopus motatrix* (LINNAEUS, 1758): 587; *Cricotopus annulipes* (MEIGEN, 1818): 42; *Cricotopus marginatus* (MACQUART, 1826): 204; *Cricotopus amoenus* (MEIGEN, 1838): 10; *Cricotopus fuscitarsis* KIEFFER, 1915: 476; *Cricotopus limnobius* KIEFFER in THIENEMANN and KIEFFER, 1916: 54; *Cricotopus variiforceps* KIEFFER in THIENEMANN, 1916: 55; *Cricotopus fusciforceps* KIEFFER, 1921: 803; *Cricotopus tarsalis* KIEFFER, 1921: 805.

Zoogeographic characterization: Holarctic species, it also occurs in the Oriental region (Europe: widely distributed; Asia: Israel, Iran, Lebanon, Afghanistan, Japan, Korea; Oriental region: Taiwan, Java; Nearctic: widespread, Canada, the USA).

Distribution: In lake Khubsugul it was found in Modot and Khankh bays, in the northern termination, within Ongolig bay and in the open part in II, IV, V, VII, VIII and IX sections.

Environment, ecology: Pebbles; pebbles overgrown with *Ulotrix*; pebbles with sand; sand; sand, carbonate concretions; sand, detritus, pondweed; silty sand; carbonate sand, silt; black silt with sand, water horsetail and stonewort; black silt, moss, stonewort; silt, detritus, stonewort; depth from 0.2-10 m.

***Cricotopus latidentatus* CHERNOVSKIJ, 1949**

Zoogeographic characterization: European-Siberian species (Europe: Romania, Poland; Russia: European part, Siberia).

Distribution: In Lake Khubsugul it is found within Ongolig bay, in the northern termination and open part in section II.

Environment, ecology: Silty sand; carbonate sand, stonewort; depth 2-21 m.

Genus *Diplocladius* KIEFFER, 1908

***Diplocladius cultriger* KIEFFER in KIEFFER and THIENEMANN, 1908**

Diplocladius decipiens (KIEFFER in KIEFFER and THIENEMANN, 1908): 9; *Diplocladius bilobatus* BRUNDIN, 1956: 71.

Zoogeographic characterization: Holarctic species (Europe: Germany, Denmark, France, Great Britain, Ireland, Norway, Poland, Finland; Russia: north, European part centre, Eastern Siberia; Asia: Japan; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it is found in the Modot bay.

Environment, ecology: Stones; depth 0.2 m.

Genus *Eukiefferiella* THIENEMANN, 1926

***Eukiefferiella brevicealcar* (KIEFFER, 1911)**

Eukiefferiella graciliella GOETGHEBUER in THIENEMANN, 1936: 56; *Eukiefferiella suecica* GOETGHEBUER, 1940: 68; *Eukiefferiella ampullaceus* (KIEFFER, 1911): 184; *Eukiefferiella pallidipes* (KIEFFER, 1911): 184; *Eukiefferiella rhabani* (KIEFFER, 1923): 162.

Zoogeographic characterization: Palaearctic species (Europe: Germany, Spain, France, Great Britain, Italy, Norway, Sweden; Russia: north and centre of European part, Western Siberia).

Distribution: In lake Khubsugul it is found within the Ongolig bay and in the open part in sections II and V.

Environment, ecology: Silty sand; carbonate sand; silty sand with stonewort; silty carbonate sand; carbonate concretions; silt; depth from 4 to 20 m.

***Eukiefferiella coerulescens* (KIEFFER in ZAVREL, 1926)**

Zoogeographic characterization: Palaearctic species (Europe: Austria, Czech Republic, France, Great Britain, Italy, Ireland, Norway, Sweden; Russia: European part centre and south; Asia: Lebanon; Northern Africa: Algeria).

Distribution: In lake Khubsugul it was found in the open lake in section V.

Environment, ecology: Carbonate concretions; carbonate sand; depth 5 m.

***Eukiefferiella quadridentata* CHERNOVSKIJ, 1949**

Zoogeographic characterization: Palaearctic species (FSU countries: Armenia).

Distribution: In lake Khubsugul it was found in the open lake in II and VII sections.

Environment, ecology: Sand; carbonate sand; silty sand; silty sand with *Cladophora*; depth 10-42 m.

***Eukiefferiella gracei* (EDWARDS, 1929)**

Eukiefferiella potthasti LEHMANN, 1972: 376; *Eukiefferiella longicalcar* POTTHAST, 1915: 200.

Zoogeographic characterization: Holarctic species (Europe: Germany, Spain, France, Great Britain, Greece, Hungary, Ireland, Sweden, Yugoslavia; Russia: European part centre, Western Siberia; FSU countries: Middle Asia; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found within the Ongolig bay and in the open lake in II, III, VII, VIII, IX sections.

Environment, ecology: Pebbles overgrown with *Ulotrix*; sand admixed with white clay; silty sand; silty sand with stonewort; carbonate sand; carbonate concretions; stonewort bush and pondweed; depth 0.3-30 m.

***Eukiefferiella similis* GOETGHEBUER, 1939**

Zoogeographic characterization: European-Siberian species (Europe: Germany, France, Italy; Russia: European part centre, Western and Eastern Siberia).

Distribution: In lake Khubsugul it occurs in the Alag-sar bay, within the Ongolig bay and in the open part in V section.

Environment, ecology: Silty sand; carbonate concretions; depth 3-30 m.

Genus *Heterotrissocladius* SPARCK, 1923

***Heterotrissocladius marcidus* (WALKER, 1856)**

Heterotrissocladius aestivalis (GOETGHEBUER, 1921): 76; *Heterotrissocladius alticola* (GOETGHEBUER, 1934): 339; *Heterotrissocladius cubitalis* (KIEFFER, 1911): 200; *Heterotrissoclsdius longicollis* (KIEFFER, 1913): 34; *Heterotreissocladius triangulifer* (KIEFFER, 1924): 99.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: north, European part south, Western and Eastern Siberia; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found in the open lake in sections II, V and VI.

Environment, ecology: Sand; silty sand; silty sand with *Cladophora*; carbonate sand; carbonate concretions; stonewort bush; depth 3 to 102 m.

Genus *Hydrobaenus* FRIES, 1830

***Hydrobaenus lugubris* FRIES, 1830**

Hydrobaenus occultans (MEIGEN, 1830): 254; *Hydrobaenus griseipennis* (GOETGHEBUER, 1913): 154; *Hydrobaenus praticola* (KIEFFER, 1915): 86; *Hydrobaenus boiemicus* (KIEFFER, 1923): 164.

Zoogeographic characterization: Palaearctic species (Europe: Austria, Belgium, Czech Republic, Germany, Denmark, France, the Netherlands, Sweden; Russia: European part centre, Eastern Siberia).

Distribution: In lake Khubsugul it was found in the open part in section II.

Environment, ecology: Sand; silty sand; silty sand with *Cladophora*; carbonate sand; silty carbonate sand; silt admixed with carbonate sand; stonewort bush, pondweed and moss; depth from 1.5 to 97 m.

Genus *Lapposmittia* THIENEMANN, 1939

***Lapposmittia parvibarba* EDWARDS in EDWARDS, THIENEMANN and KRUGER, 1939**

Zoogeographic characterization: European-Siberian species (Europe: Bulgaria, Sweden; Russia: north, European part centre; Asia: Mongolia).

Distribution: In lake Khubsugul it was found in a small lake on the western shore in section V.

Environment, ecology: Black silt with sand; depth 0.4 m.

Genus *Limnophyes* EATON, 1875

***Limnophyes prolongatus* (KIEFFER in THIENEMANN, 1921)**

Limnophyes punctatellus (GOETGHEBUER, 1921): 112; *Limnophyes aduncus* (KIEFFER, 1924): 76; *Limnophyes clavicornis* (GOETGHEBUER, 1927): 102; *Limnophyes pentaplastus* (KIEFFER, 1921): 791; *Limnophyes longiradius* (KIEFFER, 1929): 303.

Zoogeographic characterization: Palaearctic species (Europe: Austria, Belgium, Germany, France, Great Britain, Ireland; Russia: European part centre; Asia: Japan, Madeira).

Distribution: In lake Khubsugul it was found in the northern termination.

Environment, ecology: Pebbles; pebbles overgrown with *Ulotrix*; depth 0.2 - 0.6 m.

***Limnophyes transcaucasicus* CHERNOVSKIJ, 1949**

Zoogeographic characterization: European-Siberian species (Romania; Russia: European part, Eastern part).

Distribution: In lake Khubsugul it was found within the Ongolig bay, in the open lake in sections II, IV, V, VII and VIII.

Environment, ecology: Sand and small pebbles; silty sand; carbonate sand with silt; sand admixed with white clay; silty sand with stonewort; black silt with algae; depth 3-19.5 m.

Genus *Orthocladus* VAN DER WULP, 1874

Subgenus *Eudactylocladius* THIENEMANN, 1935

***Orthocladus olivaceus* (KIEFFER, 1911)**

Orthocladus vagans (THIENEMANN, 1950): 132.

Zoogeographic characterization: Holarctic species (Europe: Austria, Germany, Great Britain; North America; Russia: European part north).

Distribution: In lake Khubsugul it inhabits the Modot, Khilent and Alag-sar bays, the northern termination, the Ongolig bay, open lake in sections II, III, IV, V, VI, VII, VIII and IX.

Environment, ecology: Rocks; stones overgrown with *Ulotrix*; sand; silty sand; silty sand with carbonates and *Cladophora*; silty sand with *Cladophora*; silty sand with stonewort; carbonate sand; carbonate silty sand; carbonate concretions; black silt with algae; bush of stonewort, pondweed and moss; silt; depth 0.2-102 m.

Subgenus *Euorthocladus* THIENEMANN, 1935

***Orthocladus abiskoensis* THIENEMANN et KRUGER, 1937**

Orthocladus abiskoensis EDWARDS, 1937: 140.

Zoogeographic characterization: Holarctic species (Europe: Sweden; Russia: Western and Eastern Siberia; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found in the open part in section IV.

Environment, ecology: Coarse pebbles; depth 0.7 m.

***Orthocladus compactus* LINEVICH, 1959**

Zoogeographic characterization: Asia: Mongolia.

Distribution: In lake Khubsugul it was discovered in the bays Turug-gol, Mongorin-gol and in the open part through entire lake, sections I, II, IV, V, VII, VIII and IX.

Environment, ecology: Pebbles overgrown with algae; pebbles, sand; sand; silty sand, stonewort, pondweed; silty sand with *Cladophora*; carbonate sand; carbonate concretions; depth 0.1-55 m.

***Orthocladus thienemanni* KIEFFER in KIEFFER and THIENEMANN, 1906**

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: European part centre, Western and Eastern Siberia; Nearctic: Canada, Greenland, the USA).

Distribution: In lake Khubsugul it was discovered in the open lake in sections II and IV.

Environment, ecology: Rocks; silty sand; carbonate sand; grey silt, *Chara* bush, pondweed and moss; depth 0.1-10.2 m.

Subgenus *Orthocladus* VAN DER WULP, 1874

***Orthocladus frigidus* (ZETTERSTEDT, 1838)**

Zoogeographic characterization: Holarctic species (Europe: widespread in central and northern Europe; Russia: Western and Eastern Siberia; Northern Africa; Nearctic: Greenland).

Distribution: In lake Khubsugul it was discovered in the open lake in section V.

Environment, ecology: Carbonate silt; depth 33 m.

***Orthocladus holsatus* GOETGHEBUER, 1937**

Zoogeographic characterization: European-Siberian species (Europe: Germany, Great Britain; Asia: Mongolia).

Distribution: In lake Khubsugul it was discovered in the northern termination.

Environment, ecology: Pebbles; stonewort brushwood over black silt; depth 2 - 9 m.

***Orthocladius saxicola* KIEFFER, 1911**

Zoogeographic characterization: Palaearctic species (Europe: Austria, Germany, France Great Britain, Italy, Ireland, Yugoslavia; Russia: European part centre, Western and Eastern Siberia; Asia: Lebanon, China).

Distribution: In lake Khubsugul it inhabits the Modot, Khilent and Alag-sar bays, the northern termination, Ongolig bay, open part of the lake in sections I, II, III, IV, V, VII and IX.

Environment, ecology: Rocks; sand; sand, highest aqueous vegetation; silty sand; silty sand with *Chara* and *Cladophora*; carbonate sand with *Cladophora*; carbonate concretions; carbonate silt with sand; black silt; stonewort bush; depth 0.1-40 m.

Subgenus *Pogonocladius* BRUNDIN, 1956

***Orthocladius consobrinus* (HOLMGREN, 1869)**

Orthocladius crassicornis GOETGHEBUER, 1937: 508; *Orthocladius versidentatus* (CHERNOVSKIJ, 1949): 135.

Zoogeographic characterization: Holarctic species (Europe: Bulgaria, Germany, Great Britain, Ireland, Iceland, the Netherlands, Finland; Russia: north and European part centre, Western and Eastern Siberia; Nearctic: Canada).

Distribution: In lake Khubsugul it dwells in the Mongorin-gol, northern termination and open part in sections II and VII.

Environment, ecology: Sand, detritus, pondweed; silty sand; silty sand, pondweed, stonewort; black silt with algae; black silt with sand, water horsetail and stonewort; depth 0.7-9.8 m.

***Orthocladius gregarius* LINEVICH, 1970**

Zoogeographic characterization: Asia: Mongolia.

Distribution: In lake Khubsugul it dwells in the open part in sections II and VIII.

Environment, ecology: Rocks overgrown with *Ulotrix*; sand with fine pebbles; silty sand; depth 0.1 to 5 m.

Genus *Paracladius* HIRVENOJA, 1973

***Paracladius conversus* (WALKER, 1856)**

Paracladius denotatus (WALKER, 1856): 190; *Paracladius inserpens* (WALKER, 1856): 185; *Paracladius obtexens* (WALKER, 1856): 188; *Paracladius brunnipes* (GOETGHEBUER, 1921): 98; *Paracladius horni* (GOETGHEBUER, 1939): 386.

Zoogeographic characterization: Palaearctic species (Europe: widespread; Russia: Western and Eastern Siberia; Asia: Lebanon).

Distribution: In lake Khubsugul it dwells in the open part in sections II and V.

Environment, ecology: Sand; silty sand; silty sand with *Cladophora*; silty sand with *Chara*; carbonate sand; carbonate concretions; silty carbonate sand; grey silt; depth 3-20 m.

Genus *Parakiefferiella* THIENEMANN, 1936

***Parakiefferiella bathophila* (KIEFFER, 1912)**

Parakiefferiella cheethamii (EDWARDS, 1929): 359.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: European part centre, Western and Eastern Siberia, Russian Far East; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it dwells in the Modot and Khilent bays, within the Ongolig bay, northern termination and open part in section II.

Environment, ecology: Sand; silty sand with *Cladophora*; grey carbonate sand; silty carbonate sand; black silt with moss, *Chara* and pondweed; depth 1.5-20 m.

***Parakiefferiella gracillima* (KIEFFER, 1924)**

Zoogeographic characterization: European-Siberian species (Europe: Austria, Germany, Italy, Yugoslavia; Russia: European part centre; Asia: Mongolia).

Distribution: In lake Khubsugul it was discovered in the open part in section II.

Environment, ecology: Sand with *Cladophora*; depth 24 m.

***Parakiefferiella triquetra* (PANKRATOVA, 1970).**

Parakiefferiella triquetra CHERNOVSKIJ, 1949: 130.

Zoogeographic characterization: European-Siberian species (Russia: north, centre and south of the European part; Mongolia).

Distribution: In lake Khubsugul it occurs in the bays Modot, Khilent, Turug-gol, Alag-sar, northern termination and open part of the lake in sections II, VII, VIII and IX.

Environment, ecology: Sand; grey sand with *Cladophora* and carbonates; silty sand; silty sand with *Cladophora*; carbonate concretions; silt, black silt with algae; bush of stonewort over black silt; depth 1.5 to 45 m.

Genus *Paratrachocladus* SANTOS-ABREU, 1918

***Paratrachocladus inaequalis* KIEFFER in ZAVREL, 1926**

Zoogeographic characterization: European-Siberian species (Germany, Czech Republic; Russia: north, European part centre, Siberia).

Distribution. It was found in the lake Khubsugul Lake in the bays Modot, Khilent, Mongorin-gol, Turug-gol, Alag-sar, Khankh, Ongolig, in the northern termination, offshore in sections II, III, IV, V, VI, VII, VIII and IX.

Environment, ecology: Sand; sand with *Cladophora*; sand with white clay; silty sand; silty sand with algae; silty sand c moss and stonewort; carbonate concretions; silty carbonate sand; silt; silt with detritus; depth 0.3-68 m.

Genus *Psectrocladius* KIEFFER, 1906

Subgenus *Psectrocladius* KIEFFER, 1906

***Psectrocladius barbimanus* (EDWARDS, 1929)**

Psectrocladius dispar AKHROROV, 1977: 545; *Psectrocladius goetghebueri* AKHROROV, 1977: 547; *Psectrocladius pamiricus* AKHROROV, 1977: 546; *Psectrocladius symbiotica* AKHROROV, 1977: 545; *Psectrocladius tadshikistanicus* AKHROROV, 1977: 545; *Psectrocladius zernovi* AKHROROV, 1977: 545; *Psectrocladius ishimicus* CHERNOVSKIJ, 1949: 113.

Zoogeographic characterization: Holarctic species (Europe: Austria, Germany, Spain, France, Great Britain, Hungary, Ireland, Iceland, Sweden, Finland; Russia: centre, European part south; FSU countries: Middle Asia, Caucasus; Asia: Lebanon; Nearctic: Canada, Greenland, the USA).

Distribution: Found in Khubsugul Lake in the northern termination and open part in section II.

Environment, ecology: Sand; black silt with algae; black silt, stonewort; silty sand; silty sand with moss, stonewort; carbonate silt; black silt with sand, water horsetail and stonewort; depth 5-15.8 m.

***Psectrocladius bisetus* GOETGHEBUER, 1942**

Zoogeographic characterization: European-Siberian species (Europe: Austria, Germany, Great Britain, France, Sweden; Mongolia).

Distribution: It was found in the Modot Bay, northern termination of the Khubsugul Lake.

Environment, ecology: Rocks, overgrown with *Ulotrix*; stones with fine silt; pebbles, stonewort, water horsetail; depth 0.3-2 m.

***Psectrocladius psilopterus* (KIEFFER in KIEFFER and THIENEMANN, 1906)**

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: north, centre, European part south, Western and Eastern Siberia; Nearctic: the USA).

Distribution: In lake Khubsugul it was discovered within the Ongolig bay, northern termination and open part in sections III and VIII.

Environment, ecology: Pebbles overgrown with *Ulotrix*; silty sand; silt, pondweed; silt, stonewort, pondweed; depth 0.5-9.5 m.

***Psectrocladius simulans* (JOHANNSEN, 1937)**

Psectrocladius medius CHERNOVSKIJ, 1949: 114.

Zoogeographic characterization: Holarctic species (Russia: north, centre, European part south, Western Siberia; Nearctic: the USA).

Distribution: Found within the Ongolig Bay, northern termination of the Lake Khubsugul.

Environment, ecology: Silty sand; silty sand with stonewort; silt, detritus, stonewort; depth 2-12 m.

Genus *Pseudosmittia* GOETGHEBUER, 1932

***Pseudosmittia ruttneri* STRENZKE et THIENEMANN, 1942**

Zoogeographic characterization: European-Siberian species (Europe: Austria, Germany; Mongolia).

Distribution: Found within the Modot and Khilent bays, northern termination of Khubsugul Lake.

Environment, ecology: Rocks; pebbles with fine silt; pebbles with sand and silt; highest aquatic vegetation; depth 0.3-2.5 m.

***Pseudosmittia terestris* (GOETGHEBUER, 1941)**

Zoogeographic characterization: European-Siberian species (Europe: Germany; Mongolia).

Distribution: In lake Khubsugul in the Mongorin-gol bay and in the open part in section V.

Environment, ecology: Sand with pebbles; sand; depth 0.7-2 m.

***Pseudosmittia virgo* STRENZKE, 1950**

Zoogeographic characterization: European-Siberian species (Europe: Austria, Germany; Mongolia).

Distribution: In lake Khubsugul it occurs in the open part in sections II, III, V, VI and IX.

Environment, ecology: Pebbles; pebbles with sand; sand; sand with carbonate crusts; carbonate concretions; silty sand; silt; depth 0.5-10 m.

Genus *Smittia* HOLMGREN, 1869

***Smittia sedula* KONSTANTINOV, 1952**

Zoogeographic characterization: Eastern-Palaeartic species (Russia: Amur River basin; Mongolia).

Distribution: In lake Khubsugul it was found in the Modot and Khankh bays and in the open part of the lake in section II.

Environment, ecology: Sand; carbonate sand; silty sand; depth 2-19 m.

Genus *Thienemanniella* KIEFFER, 1911

***Thienemanniella clavicornis* (KIEFFER, 1911)**

Thienemanniella pseudosimilis (GOETGHEBUER, 1921): 73.

Zoogeographic characterization: Palaeartic species (Europe: Belgium, Germany, Spain, France, Great Britain, Ireland, Romania; Russia: European part south, Western Siberia; the Azores, Madeira Island).

Distribution: In lake Khubsugul it was found within the Ongolig bay, northern termination, open part in sections II, III, IV and IX.

Environment, ecology: Pebbles overgrown with *Ulotrix*; silt, stonewort, pondweed; depth 0.1-2.5 m.

***Thienemanniella flaviforceps* KIEFFER, 1925**

Zoogeographic characterization: European-Siberian species (Germany, Poland; Mongolia).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Silt, detritus, stonewort. Depth 4 m.

Genus *Trissocladius* KIEFFER, 1908

***Trissocladius brevipalpis* KIEFFER in KIEFFER and THIENEMANN, 1908**

Zoogeographic characterization: Palaearctic species (Europe: Belgium, Germany, Great Britain, Hungary, the Netherlands, Sweden, Finland; Russia: Eastern Siberia).

Distribution: In lake Khubsugul it was found within the Ongolig bay, and its northern termination.

Environment, ecology: Sand; sand, pondweed, moss, stonewort bush; black silt with stonewort; carbonate concretions; carbonate silt; depth 0.3-11 m.

Genus *Zalutschia* LIPINA, 1939

***Zalutschia mucronata* (BRUNDIN, 1949)**

Zalutschia potamophila (CHERNOVSKIJ, 1949): 149.

Zoogeographic characterization: European-Siberian species (Europe: Sweden, Finland, Czech Republic, Romania; Russia: north, centre, European part south, Western Siberia).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Silty sand; carbonate concretions; carbonates, silt with sand and pebbles, stonewort; depth 3-68 m.

***Zalutschia paratatica* (CHERNOVSKIJ, 1949)**

Zoogeographic characterization: Holarctic species (Russia: European part north, Western and Eastern Siberia; Nearctic: the USA (Alaska)).

Distribution: In lake Khubsugul within the Mongorin-gol bay and open part in sections I, IV and VII.

Environment, ecology: Sand; silty sand; carbonate silt; moss; silt with sand and pebbles; depth 3-86 m.

Subfamily Chironominae MAQUART, 1838

Tribe Chironomini

Genus *Chironomus* MEIGEN, 1803

Subgenus *Chironomus* MEIGEN, 1803

***Chironomus anthracinus* ZETTERSTEDT, 1860**

Chironomus bathophilus (KIEFFER, 1912): 52; *Chironomus liebeli* (KIEFFER, 1911): 28.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: European part centre, Eastern Siberia; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found in section V.

Environment, ecology: Silty sand c stonewort; black silt, algae; stonewort brushwood on the black silt; depth 1-5 m.

***Chironomus cingulatus* MEIGEN, 1830**

Cironomus sanguineus KIEFFER, 1909: 54; *Chironomus versicolor* KIEFFER, 1909: 54; *Chironomus atripes* KIEFFER, 1909: 54; *Chironomus angustiforceps* KIEFFER in THIENEMANN and KIEFFER, 1916: 505; *Chironomus nemoralis* ZETTERSTEDT, 1850: 3498; *Chironomus subulatus* (KIEFFER, 1911): 32; *Chironomus microthrix* KIEFFER in THIENEMANN and KIEFFER, 1916: 528.

Zoogeographic characterization: Palaearctic species (Europe: widespread; Russia: north, European part centre, FSU countries: Middle Asia, Eastern Siberia).

Distribution: In lake Khubsugul it was found within the Mongorin-gol bay, in the northern termination and in the open part in section IV.

Environment, ecology: Silt admixed with sand and pebbles; black silt with detritus; stonewort brushwood on the black silt; depth 7-133 m.

***Chironomus rusticus* MEIGEN, 1838**

Zoogeographic characterization: European-Siberian species (Germany; Russia: Eastern Siberia).

Distribution: In lake Khubsugul it was found within its northern termination.

Environment, ecology: Silt with stonewort and sand; silt, pondweed, stonewort brushwood; depth 1.8-3.5 m.

***Chironomus salinarius* KIEFFER in Thienemann, 1915**

Zoogeographic characterization: European-Siberian species (Europe: widespread; Russia: European part north, Eastern Siberia).

Distribution: Found within the Mongorin-gol bay and in the northern termination of the lake Khubsugul.

Environment, ecology: Black silt with detritus; black silt with pondweed and moss; depth 2-21 m.

Genus *Cladopelma* KIEFFER, 1921

***Cladopelma viridula* (LINNAEUS, 1767)**

Cladopelma krogerusi (STORA, 1939): 27.

Zoogeographic characterization: Holarctic species: it also occurs in the Oriental region (Europe: widespread; Russia: European part centre, Eastern Siberia; Asia: Japan, Mongolia; Nearctic: the USA; Oriental region: Thailand).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Silt, detritus, stonewort; depth 4 m.

Genus *Cryptochironomus* KIEFFER, 1918

***Cryptochironomus defectus* (KIEFFER, 1913)**

Zoogeographic characterization: Palaearctic species (Europe: Austria, Germany, France, Italy, the Netherlands; Russia: European part centre, Russian Far East).

Distribution: In lake Khubsugul it occurs in the Khilent, Mongorin-gol and Alag-sar bays.

Environment, ecology: Sand; highest aqueous vegetation; depth 0.7-1 m.

***Cryptochironomus* sp.**

(Chironominae genuinae N 9 LIPINA, 1926): 112.

Zoogeographic characterization: Palaearctic species.

Distribution: In lake Khubsugul it was found in the open part in sections II and V.

Environment, ecology: Sand; silty sand; silty sand with stonewort and *Cladophora*; carbonate sand; carbonate concretions; depth 1.5-33 m.

Genus *Demicryptochironomus* LENZ, 1941

***Demicryptochironomus vulneratus* (ZETTERSTEDT, 1838)**

Demicryptochironomus nigrimanus (STAEGER, 1839): 566; *Demicryptochironomus longicauda* (GOETGHEBUER, 1921): 173; *Demicryptochironomus nigrolineatus* (GOETGHEBUER, 1921): 146; *Demicryptochironomus atriforceps* (GOETGHEBUER, 1928): 84; *Demicryptochironomus okana* (LIPINA, 1939): 98; *Demicryptochironomus ploenensis* LENZ, 1960: 450.

Zoogeographic characterization: European-Siberian species (Europe: widespread; Russia: north, centre, European part south, Western and Eastern Siberia, Russian Far East).

Distribution: In lake Khubsugul it was found in the open part in section II.

Environment, ecology: Grey sand with stonewort; silty sand with carbonates; depth 3.2-11.8 m.

Genus *Dicrotendipes* KIEFFER, 1913

***Dicrotendipes nervosus* (STAEGER, 1839)**

Dicrotendipes brevitibialis (ZETTERSTEDT, 1850): 3537; *Dicrotendipes futilis* (WALKER, 1856): 156; *Dicrotendipes falciformis* (KIEFFER, 1912): 51; *Dicrotendipes goetghebueri* (KIEFFER, 1915): 81; *Dicrotendipes bipartitus* (KIEFFER, 1915): 81.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: north, European part centre, Eastern Siberia; FSU countries: Middle Asia; Asia: North Korea; Nearctic: Canada, the USA).

Distribution: In Khubsugul it was found in the Modot and Khilent bays in sections VII and IX.

Environment, ecology: Pebbles; sand; clumps of stonewort; depth 0.3-3 m.

Genus *Einfeldia* KIEFFER, 1924

***Einfeldia carbonaria* (MEIGEN, 1804)**

Einfeldia kruglovicola (LIPINA, 1939): 99.

Zoogeographic characterization: European-Siberian species (Europe: Germany; Russia: north, European part centre, Eastern Siberia, Russian Far East).

Distribution: In Khubsugul it was found within the Ongolig bay.

Environment, ecology: Silt, detritus, stonewort; silt, stonewort, pondweed; depth 2.5-4 m.

Genus *Endochironomus* KIEFFER, 1918

***Endochironomus albipennis* (MEIGEN, 1830)**

Endochironomus miki (KIEFFER, 1915): 81; *Endochironomus maritima* KIEFFER, 1921: 278.

Zoogeographic characterization: Palaearctic species (Europe: Austria, Belgium, Czech Republic, Germany, Great Britain, Italy, Ireland, the Netherlands, Sweden, Finland; Russia: north, European part centre, Western and Eastern Siberia; FSU countries: Middle Asia, Kazakhstan; Asia: Mongolia).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Silt, stonewort, pondweed; highest aqueous vegetation; depth 1.3-1.5 m.

Genus *Glyptotendipes* KIEFFER, 1913

***Glyptotendipes barbipes* (STAEGER, 1839)**

Glyptotendipes heteropus KIEFFER, 1918: 95; *Glyptotendipes singularis* GOETGHEBUER, 1930: 3; *Glyptotendipes staegeri* KRUSEMAN, 1933: 144; *Glyptotendipes tschernovskyi* SHILOVA, 1952: 406.

Zoogeographic characterization: Holarctic species (Europe: Austria, Bulgaria, Germany, Denmark, Hungary, Ireland, the Netherlands, Romania, Finland; Russia: European part centre; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found in the northern termination of the lake.

Environment, ecology: Sand, some detritus, pondweed; depth 1 m.

***Glyptotendipes gripekoveni* (KIEFFER, 1913)**

Zoogeographic characterization. Palaearctic species (Europe: widespread; Russia: north, European part centre, Western and Eastern Siberia, Russian Far East; FSU countries: Caucasus).

Distribution: In Khubsugul found in the northern termination and in a small pond on the western shore.

Environment, ecology: Pebbles with sand and silt; sand; black silt; silt, stonewort; depth 0.4-2.5 m.

***Glyptotendipes paripes* (EDWARDS, 1929)**

Glyptotendipes alobulatus KRUSEMAN, 1933: 146; *Glyptotendipes flavipes* KRUSEMAN, 1933: 146; *Glyptotendipes subglaucus* GOETGHEBUER, 1933: 119; *Glyptotendipes hypogaeus* (KIEFFER, 1913): 39.

Zoogeographic characterization: Holarctic species (Europe: Belgium, Germany, France, Great Britain, Italy, Ireland, the Netherlands, Finland; Russia: north, European part centre, Eastern Siberia, Russian Far East; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found in its northern termination.

Environment, ecology: Sand, some detritus, pondweed; depth 1 m.

Genus *Microchironomus* KIEFFER, 1918

***Microchironomus tener* (KIEFFER, 1918)**

Microchironomus aegyptius (KIEFFER, 1925): 288; *Microchironomus balticus* (PAGAST, 1931): 216; *Microchironomus sinuosus* (KIEFFER, 1924): 393.

Zoogeographic characterization: Palaearctic species, it also occurs in the Oriental and Australian regions (Europe: Belgium, Germany, Spain, Great Britain, Italy, the Netherlands, Poland, Sweden, Finland, Ireland; Russia: European part centre, Russian Far East; FSU countries: Middle Asia; Asia: Israel, North Korea; North Africa: Egypt; Oriental region: India, Indonesia; Australia).

Distribution. In Khubsugul it was found within the Ongolig bay and in its open part in section II.

Environment, ecology: Sand, some detritus; sand, moss, coarse detritus; sand with carbonates; carbonate silt; depth 5-9 m.

Genus *Microtendipes* KIEFFER, 1915

***Microtendipes pedellus* (DE GEER, 1776)**

Microtendipes cantans (FABRICIUS, 1794): 247; *Microtendipes littoralis* (SCHRANK, 1803): 74; *Microtendipes lividus* (MEIGEN, 1830): 246; *Microtendipes stagnorum* (KIEFFER, 1911): 26; *Microtendipes brachysandalum* KIEFFER, 1915: 70; *Microtendipes confusus* KIEFFER, 1918: 51; *Microtendipes cinereiventris* (GOETGHEBUER, 1921): 169; *Microtendipes littoralis* (LINNAEUS, 1758): 587; *Microtendipes atricornis* (STROBL, 1880): 53; *Microtendipes vulgaris* (STROBL, 1880): 53; *Microtendipes laccophilus* KIEFFER, 1922: 81.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: north, European part centre, Eastern Siberia; Asia: Lebanon; North Africa: Morocco, Nearctic: Canada, the USA).

Distribution: In Khubsugul found within the Modot and Khilent bays, in the northern termination and open lake in section IX.

Environment, ecology: Silt; silty sand; sand, stonewort clumps, moss; sand, carbonate concretions, pondweed; silt, stones, sand, pondweed, detritus; depth 1.2-10 m.

Genus *Parachironomus* LENZ, 1921

***Parachironomus pararostratus* (HARNISCH, 1923)**

Zoogeographic characterization: European-Siberian species (Western Europe, possibly in Russia; Mongolia).

Distribution: In Khubsugul it was found within the Ongolig bay and in its open part in section II.

Environment, ecology: Carbonate sand; silt, some sand; silt, detritus, pondweed; depth 25-92 m.

Genus *Paracladopelma* HARNISCH, 1923

***Paracladopelma camptolabis* (KIEFFER, 1913)**

Paracladopelma allolabis (KIEFFER in THIENEMANN and KIEFFER, 1916): 527.

Zoogeographic characterization: Palaearctic species (Europe: Germany, Great Britain, Italy, Norway, Sweden, Finland; Russia: European part centre; Asia: Lebanon).

Distribution: In Khubsugul found within the Modot, Khilent, Turug-gol and Alag-sar bays, in the northern termination, within Ongolig bay and open lake in sections I, II, III, IV, V, VI, VII, VIII and IX.

Environment, ecology: Sand; sand, detritus, pondweed; silty sand; silty sand with stonewort; silty sand with *Cladophora*; silty sand with carbonates and *Cladophora*; carbonate sand; carbonate concretions; silt; carbonate silt with *Cladophora*; black silt with sand, water horsetail and stonewort; depth varying from 1 to 100 m.

Genus *Paratendips* KIEFFER, 1911

***Paratendips albimanus* (MEIGEN, 1818)**

Paratendips annularis (MEIGEN, 1804): 17; *Paratendips heteropus* (KIEFFER, 1906): 335.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: European part centre; Asia: Lebanon; Nearctic: the USA).

Distribution: In lake Khubsugul it was found within the Khilent and Alag-sar bays, within the Ongolig bay and open part in sections II, VII and IX.

Environment, ecology: Pebbles, sand; sand, stonewort brushwood; silty sand; silty sand, algae; grey sand, stonewort; silty sand, carbonates; silty carbonate sand with coarse detritus; carbonate silt; black silt, stonewort; depth 1.2-17 m.

Genus *Polypedilum* KIEFFER, 1912

Subgenus *Pentapedilum* KIEFFER, 1913

***Polypedilum exsectum* (KIEFFER in THIENEMANN, 1916)**

Polypedilum suecicum (KIEFFER, 1924): 37.

Zoogeographic characterization: European-Siberian species (Europe: Czech Republic, Germany, Spain, Poland, Sweden; Russia: European part centre, Eastern Siberia).

Distribution: In lake Khubsugul it was found within the Ongolig bay.

Environment, ecology: Highest aqueous vegetation; depth 1.3 m.

Subgenus *Polypedilum* KIEFFER, 1912

***Polypedilum convictum* (WALKER, 1856)**

Polypedilum blandum (VAN DER WULP, 1858): 164 (*Chironomus*); *Polypedilum nympha* KIEFFER in THIENEMANN and KIEFFER, 1916: 523; *Polypedilum testaceum* MACQUART, 1826): 142.

Zoogeographic characterization. Holarctic species (Europe: widespread; Russia: European part centre, Russian Far East, FSU countries: Kazakhstan; North Africa: Morocco; Nearctic: Canada, the USA).

Distribution: In lake Khubsugul it was found within the Khankh bay and open lake in section II.

Environment, ecology: Sand with *Cladophora*; silty sand; carbonate sand; silty sand with carbonates and *Cladophora*; silt; depth 5-37 m.

Subgenus *Tripodura* TOWNES, 1945

***Polypedilum bicrenatum* KIEFFER, 1921**

Polypedilum flavonervosum (STAEGER, 1839): 578.

Zoogeographic characterization: Palaearctic species (Europe: Germany, Denmark, Italy, Ireland, the Netherlands, Poland, Sweden, Finland; Russia: north, centre, European part south).

Distribution: In Khubsugul it dwells within the Khankh bay and in the open lake in section IX.

Environment, ecology: Silty sand with carbonate concretions; silt, detritus, moss; depth 3-10 m.

***Polypedilum scalaenum* (SCHRANK, 1803)**

Polypedilum rinotatum (VAN DER WULP, 1874): 138; *Polypedilum conjunctum* KIEFFER, 1920: 162; *Polypedilum breviantennatum* CHERNOVSKIJ, 1949: 80.

Zoogeographic characterization: Holarctic species (Europe: widespread; Russia: north, European part centre, eastern Siberia, Russian Far East; Asia: Israel, Lebanon, Mongolia, North Korea; North Africa: Morocco; the Netherlands, Nearctic: Canada, the USA).

Distribution: In Lake Khubsugul it was found within the Modot, Khilent, Mongolrin-gol and Alag-sar bays, within the Ongolig bay and open lake in sections II, III, IV, VII, VIII and IX.

Environment, ecology: Grey sand, pebbles; silty sand; carbonate silt, sand; white silt with algae; sand, carbonate concretions; silty sand, detritus; black silt with stonewort; black silt with sand, water horsetail and stonewort; silty sand, *Cladophora*; stonewort brushwood, pondweed and moss; depth 0.7-36 m.

Genus *Sergentia* KIEFFER, 1922

Subgenus *Baicalosergentia* LINEVICH, 1959

***Sergentia flavodentata* CHERNOVSKIJ, 1949**

Zoogeographic characterization: Russia: Eastern Siberia: Lake Baikal, Irkutsk water reservoir, Asia: Mongolia.

Distribution: In lake Khubsugul it was found within the open part in section II.

Environment, ecology: Silty sand; sand with stonewort; depth 5-5.5 m.

Subgenus *Sergentia* KIEFFER, 1922

***Sergentia baueri* WALKER, KIKNADZE, KERKIS and NEVERS, 1999**

Sergentia longiventris BAUER, 1945: 1001; *Sergentia* gr. *longiventris* CHERNOVSKIJ, 1949: 84; *Sergentia* gr. *longiventris* KIKNADZE et al., 1991: 28.

Zoogeographic characterization: European-Siberian species (Northern and middle Europe, Siberia, Khabarovsk region).

Distribution: In lake Khubsugul it was found within the Turug-gol and Ongolig bays, northern termination and open lake in sections I, II, III, IV, V, VI, VIII and IX.

Environment, ecology: Sand; sand, silt, pondweed; silty sand; silty sand with *Cladophora*; silty sand with stonewort; carbonate sand, silt, stonewort; sand, carbonate concretions; carbonate silt, moss, sand; stonewort brushwood over black silt; depth 1.5-38 m.

***Sergentia intermedia* LINEVICH, 1958**

Zoogeographic characterization: European-Siberian species (Russia: Eastern Siberia: Irkutsk, Bratsk, Ust-Ilimsk water reservoirs, Angara River).

Distribution: In lake Khubsugul it was found within the open part of the lake in section II.

Environment, ecology: Sand; silty sand, some pebbles; carbonate silty sand; depth from 4.7- 41 m.

Genus *Stictochironomus* KIEFFER, 1919

***Stictochironomus crassiforceps* (KIEFFER, 1922)**

Zoogeographic characterization: European-Siberian species (Europe: Switzerland, Germany, Finland; Russia: European part centre, Eastern Siberia).

Distribution: In Khubsugul it was found within the open part of the lake in sections II and V.

Environment, ecology: Coarse sand, fine pebbles; sand; silty sand; silty sand with stonewort; silty sand with *Cladophora*; carbonate sand; silt; stonewort brushwood, pondweed and moss; depth 2.6-40 m.

***Stictochironomus sticticus* (FABRICIUS, 1781)**

Stictochironomus histrio (FABRICIUS, 1794): 244; *Stictochironomus cornix* (KIEFFER, 1911): 22; *Stictochironomus albimanus* KIEFFER, 1924: 33; *Stictochironomus fuscocinctus* KIEFFER, 1924: 32; *Stictochironomus rufocinctus* KIEFFER, 1924: 32.

Zoogeographic characterization: Palaearctic species (Europe: Austria, Belgium, Germany, Denmark, Spain, Great Britain, Ireland, Norway, the Netherlands, Sweden, Finland, Yugoslavia; Russia: north, European part centre, Eastern Siberia; Asia: Japan).

Distribution: In lake Khubsugul it was found within the Turug-gol and Ongolig bays, northern termination and open lake in sections II, III, IV, V, VI, VII, VIII, IX.

Environment, ecology: Sand; silty sand; silty sand with *Cladophora*; carbonate sand; carbonate black silt with stonewort; stonewort brushwood; depth 2.2-36 m.

***Stictochironomus psammophilus* CHERNOVSKIJ, 1949**

Zoogeographic characterization: European-Siberian species (Russia, not located precisely; Asia: Mongolia).

Distribution: In lake Khubsugul it was found in the Modot, Khilent, Alag-sar and Ongolig bays, northern termination and open lake in sections II, IV, V, VI, VII, VIII and IX.

Environment, ecology: Stones, sand; fine sand, fine pebbles; sand with *Cladophora*; silty sand; silty sand with *Cladophora*; silty sand, carbonates, moss; carbonate sand; black silt with stonewort, moss; silt; depth 1-92 m.

Tribe Tanytarsini

Genus *Cladotanytarsus* KIEFFER, 1921

***Cladotanytarsus mancus* (WALKER, 1856)**

Cladotanytarsus modicellus (WALKER, 1856): 162.

Zoogeographic characterization: European-Siberian species (Europe: widespread; Russia: north, European part centre; Asia: Mongolia).

Distribution: In lake Khubsugul it was found in the Mongorin-gol, Alag-sar, Khilent and Khankh bays, northern termination and open lake in sections II, III, VI, VII and VIII.

Environment, ecology: Sand; sand, detritus, highest aqueous vegetation; silty sand; silty sand with pondweed; silt, detritus, moss, carbonate concretions; stonewort brushwood over black silt; depth 0.7-20 m.

Genus *Constempellina* BRUNDIN, 1947

***Constempellina brevicosta* (EDWARDS, 1937)**

Constempellina septentrionalis (CHERNOVSKIJ, 1949): 47.

Zoogeographic characterization: Palaearctic species (Europe: Germany, Norway, Sweden, Finland; Russia: north, European part centre, Eastern Siberia).

Distribution: In lake Khubsugul it was found in the Modot and Alag-sar bays, northern termination, within the Ongolig bay, and open lake in sections II, III, VII and IX.

Environment, ecology: Stones overgrown with carbonates; sand; sand with carbonates; sand, detritus, pondweed; silty sand; silty sand with *Cladophora*; carbonate sand; stonewort brushwood over black silt; depth 3-42 m.

Genus *Micropsectra* KIEFFER, 1909

***Micropsectra junci* (MEIGEN, 1818)**

Micropsectra praecox (WIEDEMANN in MEIGEN, 1818): 49; *Micropsectra brunnipes* (ZETTERSTEDT, 1850): 3518; *Micropsectra gmundensis* (EGGER, 1863): 1109; *Micropsectra flavofasciata* (KIEFFER, 1911): 47; *Micropsectra subviridis* (GOETGHEBUER, 1921): 124.

Zoogeographic characterization: Palaearctic species (Europe: Austria, Belgium, Germany, France, Great Britain, the Netherlands, Ireland, Sweden, Finland; Asia: Lebanon).

Distribution: In Khubsugul found in the Modot, Khilent, Turug-gol, Mongorin-gol, Alag-sar, Khankh bays, within the Ongolig bay, northern termination and open lake in sections II, III, IV, V, VI, VII, VIII and IX.

Environment, ecology: Pebbles, sand; pebbles with silty sand; sand with *Cladophora*; sand, carbonate concretions; silty sand; silty sand with algae; silty sand with carbonates and *Cladophora*; silty sand, moss, stonewort, highest aqueous vegetation; carbonate sand; carbonate silt; silt; stonewort brushwood over black silt; depth 0.2-101.5 m.

***Micropsectra radialis* GOETGHEBUER, 1939**

Micropsectra coracina (KIEFFER, 1911): 42.

Zoogeographic characterization: Palaearctic species: it also occurs in the Oriental part (Europe: widespread; Russia: European part centre, Eastern Siberia; Oriental region: Nepal).

Distribution: In Lake Khubsugul it was identified in the Modot, Khilent, Turug-gol, Mongorin-gol, Alag-sar, Khankh and Ongolig bays, northern termination and open lake in sections II, III, IV, V, VI, VII, VIII and IX.

Environment, Ecology: Pebbles, sand; pebbles overgrown with *Ulotrix*; sand with stonewort; sand, detritus, pondweed; silty sand; silty sand with *Cladophora*; silty sand with stonewort and *Cladophora*; carbonate silt; silt, sand; carbonate concretions; silt, detritus, moss; stonewort bush, pondweed and moss; depth 0.2-101.5 m.

Genus *Paratanytarsus* THIENEMANN & BAUSE, 1913

***Paratanytarsus confusus* PALMAEN, 1960**

Zoogeographic characterization: Palaearctic species (Europe: Germany, Spain, France, Great Britain, Ireland, the Netherlands, Finland; Russia: European part centre).

Distribution: In Khubsugul it was discovered within the Ongolig bay.

Environment, ecology: Carbonate concretions; stonewort; depth 4 m.

***Paratanytarsus lauterborni* (KIEFFER, 1909)**

Zoogeographic characterization: European species (Europe: Germany, France, Great Britain, Norway, the Netherlands and Finland).

Distribution: In lake Khubsugul it was identified in the Modot, Khilent, Turug-gol Ongolig bays, northern termination and open lake in sections II, IV and VI.

Environment, ecology: Pebbles, sand, highest aqueous vegetation; sand with carbonates; silty sand, silty sand with *Cladophora*; carbonate concretions; carbonates and *Cladophora*; black silt with sand; silt, detritus, stonewort; stonewort over black silt; depth 0.2-86 m.

Genus *Rheotanytarsus* THIENEMANN & BAUSE, 1913

***Rheotanytarsus exiguus* (JOHANNSEN, 1905)**

Zoogeographic characterization: Holarctic species (Western Europe; Nearctic: North America).

Distribution. In lake Khubsugul it was identified in the Mongorin-gol bay, within the Ongolig bay and open lake in sections V, VII and VIII.

Environment, ecology: Sand; silty sand; silty sand, stonewort, *Cladophora*; silty sand with *Cladophora*; silty carbonate sand; silt, detritus, stonewort; carbonate silt, carbonate concretions; depth 0.6-40 m.

Genus *Tanytarsus* VAN DER WULP, 1874

***Tanytarsus gregarius* KIEFFER, 1909**

Tanytarsus lobatifrons KIEFFER, 1913: 27; *Tanytarsus macrosandalum* KIEFFER, 1925: 219; *Tanytarsus profundus* KIEFFER, 1925: 222; *Tanytarsus profundorum* (KIEFFER, 1925): 219.

Zoogeographic characterization: Palaearctic species (Europe: Belgium, Germany, Great Britain, Ireland, Norway, Poland, Romania, Sweden, Finland; Russia: European part north).

Distribution: In Khubsugul it was found in the Modot, Khilent, Turug-gol, Mongorin-gol, Alag-sar, Khankh bays, within the Ongolig bay, northern termination and open lake in sections II, III, IV, V, VI, VII, VIII and IX.

Environment, ecology: Stones, sand; silty sand; silty sand with *Cladophora*; silty sand with stonewort; carbonate sand; silty carbonate sand with coarse detritus; sand, black silt with algae; black silt with stonewort; stonewort bush, pondweed and moss; depth 0.3-86 m.

***Tanytarsus mendax* REIS & FITTKAU, 1971**

Zoogeographic characterization: European-Siberian species (Europe: Germany, Finland; Asia: Mongolia).

Distribution: In lake Khubsugul it was found in the Modot bay, in the open lake in section II.

Environment, ecology: Sand with *Cladophora* and carbonates; fine silty sand; carbonate concretions, *Cladophora*; silty carbonate sand with *Cladophora*; depth 14-20 m.

***Tanytarsus pallidicornis* (WALKER, 1856)**

Tanytarsus subaequalis GOETGHEBUER, 1921: 119; *Tanytarsus tetramerus* KIEFFER, 1922: 119; *Tanytarsus paschalis* GOETGHEBUER, 1933: 212; *Tanytarsus hueti* GOETGHEBUER, 1942: 6; *Tanytarsus conicomatus* KRUGER, 1945: 1108.

Zoogeographic characterization: Palaearctic species (Europe: Belgium, Czech Republic, Germany, Great Britain, Ireland, Poland, Yugoslavia; Russia: European part centre, Eastern part centre; Asia: Mongolia).

Distribution: In Khubsugul it was discovered in the bays Khilent, Mongorig-gol, Alag-sar, within the Ongolig bay, in the northern end and open part in sections II, III, IV, VI, VII, VIII and IX.

Environment, ecology: Pebbles overgrown with algae; coarse sand, small pebbles; silty sand; silty sand with *Cladophora*; sand, carbonate concretions; silty carbonate sand with coarse detritus; black silt with stonewort; stonewort brushwood; silt with *Cladophora*; depth 0.5-44 m.

***Tanytarsus pseudolestagei* SHILOVA, 1976**

Zoogeographic characterization. European-Siberian species (Europe: Finland; Russia: European part centre: Mongolia).

Distribution: In Khubsugul Lake, the species was discovered within the Ongolig bay.

Environment, ecology: Silt, stonewort, pondweed; depth 2.5 m.

4. Conclusion

The Chironomids fauna of the Khubsugul Lake is taxa-diversified. Total of 107 species and forms were found in the lake. They belong to five subfamilies of Chironomidae: Tanytopodinae (11 species), Diamesinae (7), Prodiamesinae (1), Orthoclaadiinae (48), Chironomiinae (40). The dominant taxa are orthoclaidiins and chironomiins. Only one endemic species - *Pseudodiamesa venusta* MAKARCHENKO, 1984 - was discovered in the Khubsugul Lake.

Acknowledgements

This paper is dedicated to commemoration of outstanding scientist and the former director of the Institute Prof. Dr. OLGA KOZHOVA, who for many years initiated and supervised research expeditions to Mongolia. The authors appreciate contributions of L.A. KATS and L.K. ZHARIKOVA to determination in part of Chironomidae species in the lake Khubsugul.

We are grateful to Dr. ANNEGRET STUBE and Prof. MICHAEL STUBE for long-term research cooperation in Mongolia, their professional assistance and discussions.

References

- ANDERSEN, T., CRANSTON, P.S. & EPLER, J.H. (2013) (Sci. eds): The larvae of Chironomidae (Diptera) of the Holarctic Region - Keys and diagnoses. - Insect Systematics and Evolution, Suppl. **66**: 1-571.
- ASHE, P.; CRANSTON, P.S. (1990): Chironomidae. In: A. SOOS (Ed.): Catalogue of palaearctic Diptera. Academiai kiado. - V. 2 (Psychodidae - Chironomidae). - Budapest: 113-355.
- DASHDORZH, A. (1953): Investigation of water reservoirs and aquatic fauna in Eastern and North Mongolia (Amur and Selenga River basins on the Mongolian territory) - Candidate Thesis. - Irkutsk, 20 pp. (in Russian).
- CHERNOVSKIY, A.A. (1949): Determinant of chironomids of family Tendipedidae - Determinant of the USSR fauna. Issue 31 - Moscow, Leningrad, 186 pp. (in Russian).
- ERBAEVA, E.A. (1976): Chironomidae larvae in the Khubsugul Lake. In: Natural conditions and resources of the Khubsugul Lake (Mongolia). - Irkutsk, Ulan-Baatar: 218-226. (in Russian).
- ERBAEVA, E.A.; SAFRONOV, G.P. (2009a): Diptera, Chironomidae in Lake Hubsugul. - In: TIMOSHKIN O.A. (ed.): Index of animal species inhabiting Lake Baikal and its catchment area. Basins and channels in the south of East Siberia and North Mongolia. Book 1, vol. **2**. - Nauka, Novosibirsk, p. 589-607. (in Russian).
- ERBAEVA, E.A.; SAFRONOV, G.P. (2009b): Diptera, Chironomidae in Angara river and its reservoirs. - In: TIMOSHKIN, O.A. (ed.): Index of animal species inhabiting Lake Baikal and its catchment area. Basins and channels in the south of East Siberia and North Mongolia. Book 1, vol. **2**. - Nauka, Novosibirsk, p. 348-395. (in Russian).
- ERBAEVA, E.A.; SAFRONOV, G.P.; BUJANTUEV, V.A. (2011): Chironomids of some rivers in the basin of Barguzin river. - Biodiversity of soils and biota of Northern and Central Asia. Vol. **2**. - Buryat Sci. Centre Press, Ulan-Ude, p. 172-173. (in Russian).
- ERBAEVA, E.A., VARYKHANOVA, K.V., ROZHKOVA, N.A. (1989): Wasserinsekten des Chub-sugul-Sees in der Nord-Mongolei. - Forsch. Biol. Ress. MVR (Halle/Saale) **6**: 69-75.
- HAYFORD, B.; FERRINGTON, L.C. (2006): Distribution of Chironomidae (Diptera) in Lake Hövsgöl, Mongolia. - In: GOULDEN, C.E.; SITNIKOVA, T.; GELHAUS, J.; BOLDGIV, B. (eds.): The Geology, Biodiversity and Ecology of Lake Hövsgöl (Mongolia). - Leiden, p.433-452.
- KOZHOVA, O.M.; ERBAEVA, E.A.; SAFRONOV, G.P. (1998): Comparative analysis of benthic fauna in Lake Baikal and Khubsugul. - Siberian Ecol. J. N **5**: 391-396. (in Russian).
- KOZHOVA, O.M.; ERBAEVA, E.A.; SAFRONOV, G.P. (2000): The benthic Invertebrates of Lake Khubsugul, Mongolia. - Ancient Lakes: Biodiversity, Ecology and Evolution. Advances in Ecological Research. - London, p. 97-184.

- LINEVICH, A.A. (1964): Tendipedidae (Chironomidae) of the Baikal and Trans-Baikal regions. Resume of Doctoral thesis. – Leningrad, 68 p. (in Russian).
- MAKARCHENKO, E.A. (1984): New species of Chironomidae of *Pseudodiamesa* Goetgh. genus (Diptera, Chironomidae) from Mongolia (Khubsugul Lake). – Ecological investigations of Lake Baikal and Baikal region. – Irkutsk, p. 60–65. (in Russian).
- MAKARCHENKO, E.A.; MAKARCHENKO, M.A. (1999): Chironomids (*Chironomidae*) - Determinant of fresh water invertebrates of Russia and adjacent areas. - V. 4. – St.-Petersburg, p. 210–295. (in Russian).
- NATURAL CONDITIONS and resources of the Khubsugul region in Mongolia (1976): - Nedra, Moscow, 355 p. (in Russian).
- PANKRATOVA, V.Ya. (1970): Larvae and wigglers of subfamily Orthoclaadiinae of the USSR fauna (Diptera, Chironomidae=Tendipedidae). Determinant of the USSR fauna. Issue 102. - Nauka, Leningrad, 344 p. (in Russian).
- PANKRATOVA, V.YA. (1977): Larvae and wigglers of subfamily Podonominae and Tanypodinae of the USSR fauna (Diptera, Chironomidae=Tendipedidae). Determinant of the USSR fauna. Issue 112. - Nauka, Leningrad, 154 p. (in Russian).
- PANKRATOVA, V.YA. (1983): Larvae and wigglers of subfamily Chironominae of the USSR fauna (Diptera, Chironomidae=Tendipedidae). Determinant of the USSR fauna. V. 134. - Nauka, Leningrad, 296 p. (in Russian).
- PROVIZ, V.I.; PROVIZ, L.I. (1999): Atlas and determinant of chironomids larvae of genus *Sergentia* from Lake Baikal. – Publ. House OIGGM SB RAS, Novosibirsk, 102 p. (in Russian).

Addresses: E.A. Erbaeva
 G.P. Safronov *
 Scientific-Research Institute of
 Biology at Irkutsk State University
 3 Lenin Street, Irkutsk 664003, Russia
 e-mail: gsafro@bio.isu.runnet.ru

* Corresponding author